

Compilers

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الاساتذ

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Sheet 2

Q1:

- All strings starting with zero and ending with zero
- All strings of $\{0,1\}$ including ϵ (null)
- All strings of $\{0,1\}$ with third character from the right being zero (000, ..., 011, ..., 010, ..., 001)
- All strings having exactly three ones (1)
- All strings with even number of zeros and ones.

Q3: no digit \rightarrow 1 probability
 one digit \rightarrow 2 probabilities
 two digits \rightarrow 4
 three \rightarrow 8

15 distinct strings

Q4: $(abab)^* = i = ii$

$i = (abab(babab)^*b) + \epsilon$
 $ii = (ab(abab)^*ab) + \epsilon$

Q5: $\begin{bmatrix} (00)^* \\ 01^+ \\ 10^+ \end{bmatrix} \neq \{i, ii\}$

i) 011111 0

ii) 011 011 0

iii) 00011 01 \Rightarrow can be true if compilers scan two digits

Q2:

- $1^*(01^*01^*)^*$
- $0^*1(0^*10^*1)^*0^*$
- $(0+10)(0^*1)^*$
- $(0+1)(10^*1)(0+1)^*$